

Amendments to the Claims:

36 3601 1. (currently amended) A method of treating a tumor comprising:
providing a tissue biopsy and treatment apparatus for detecting and treating a tumor, ~~the apparatus comprising an elongated delivery device including a lumen, the elongated delivery device being maneuverable, in tissue; a sensor array deployable from the elongated delivery device, the sensor array including a plurality of resilient members each having a tissue piercing distal portion, at least one of the plurality of resilient members being positionable in the elongated delivery device in a compacted state and deployable with curvature into tissue from the elongated delivery device in a deployed state, at least one of the plurality of resilient members including at least one of a sensor, a tissue piercing distal end or a lumen, the sensor array having a geometric configuration adapted to volumetrically sample tissue at a tissue site to differentiate or identify tissue at the tissue site; and at least one energy delivery device coupled to one of the sensor array, at least one some of the plurality of resilient members or the elongated delivery device being electrodes which can be coupled to an RF energy source for ablating tissue when electrical energy is supplied to the electrodes from the source;~~

~~introducing the apparatus into positioning said apparatus at a target tissue site; distinguishing a tissue type utilizing the sensor array to measure a spectral profile of at least one portion of the tissue site;~~

~~positioning the energy delivery device utilizing tissue type information derived from the sensor array to ablate or necrose a tumor volume; deploying said electrodes, thus to define an ablation volume that includes at least a portion of the tumor volume,~~

~~delivering energy from the energy delivery device to said electrodes to ablate or necrose at least a portion of the tumor volume; and~~

~~determining an amount of tumor volume ablation utilizing the sensor array.~~

2. (currently amended) The method of claim 1, further comprising:
monitoring a tissue volume in the target tissue site using said spectral profile.

3. (currently amended) The method of claim 2, wherein the apparatus includes logic resources coupled to ~~at least one of the sensor, the energy delivery device or a power source coupled to the energy delivery device~~, the method further comprising:
adjusting one of a power, a current, a power duty cycle or a fluid flow in response to an input from the sensor array.

4. (currently amended) The method of claim 3, wherein the input is ~~at least one selected from the group consisting of~~ a temperature, an impedance, an optical absorbance, an optical reflectance, ~~or~~ and a pH.

5. (original) The method of claim 3, wherein the logic resources include at least one of a processor, a microprocessor, a software module, a fuzzy logic module, a temperature compensation module, or a database.

6. (currently amended) The method of claim 2, wherein ~~the tissue volume includes~~ said distinguishing includes measuring a spectral profile at least at a first tissue volume and a second tissue volume.

7. (currently amended) The method of claim 6, wherein the ~~at least a first tissue volume is in closer proximity to the energy delivery device~~ apparatus than the second tissue volume.

8. (original) The method of claim 6, wherein the first tissue volume is within a tumor volume and the second tissue volume is outside of the tumor volume.

9. (currently amended) The method of claim ~~4~~ 6, further comprising:
comparing a the spectral profile of the first tissue volume to a the second tissue volume.

10. (canceled)

11. (currently amended) The method of claim 10, further comprising:

positioning ~~the~~ a first portion of the sensor array in the first tissue volume and ~~the~~ a second portion of the sensor array in the second tissue volume.

12-17. (canceled)

18. (original) The method of claim 1, further comprising:
locating a tumor volume within the target tissue site utilizing the sensor array.

19. (original) The method of claim 18, further comprising:
positioning the sensor array to detect one of the tumor volume or a boundary of
the tumor volume.

20-22. (canceled)

23. (original) The method of claim 1, further comprising:
determining an amount of tissue necrosis, coagulation, or injury utilizing the
sensor array.

24. (original) The method of claim 1, further comprising:
determining a treatment end point utilizing the sensor array.

25. (original) The method of claim 1, further comprising:
determining a healthy tissue ablative margin responsive to an input from the
sensor array.

26-28. (canceled)

29. (currently amended) The method of claim 25, wherein the logic resources
are electronically coupled to a power source ~~coupled to the energy delivery device~~.

30. (canceled)

31. (currently amended) The method of claim 30~~1~~, further comprising:
comparing an input from the sensor array to the database.

32. (currently amended) The method of claim 1, further comprising:
identifying at least one of a tissue type or a tissue property utilizing the spectral
profile measured by the sensor array.

33. (original) The method of claim 32, wherein the tissue identification is
determined using logic resources coupled to the sensor array.

34. (original) The method of claim 33, wherein the logic resources are
electronically coupled to a power source coupled to the energy delivery device.

B6
cont.
35. (original) The method of claim 33, wherein the logic resources include at
least one of a processor, a microprocessor, a software module, a fuzzy logic module, a
database, a histological database, a tissue database or a tumor database.

36. (previously amended) The method of claim 35, further comprising:
comparing an input from the sensor array to the database.

37. (currently amended) The method of claim 32, wherein the tissue type is ~~one~~
selected from the group consisting of a cancer, a metastatic cancer, a cyst, a tumor, a
coagulated tissue, an injured tissue, a lysed tissue, ~~or~~ and a necrosed tissue.

38. (canceled)

39. (currently amended) The method of claim 32, further comprising:
making a treatment decision based on information derived from a the tissue
~~identification type~~ or a the tissue property.

40. (currently amended) The method of claim 32, further comprising:

making one of a diagnosis or a differential diagnosis based on the tissue property.

41. (original) The method of claim 32, further comprising:
making a differential diagnosis based on at least two tissue properties.

42. (original) The method of claim 39, wherein the treatment decision is at least one of a resection, a biopsy, an ablation, an energy delivery, an amount of energy delivery, an energy delivery duty cycle, a drug delivery, an amount of drug delivery or a chemotherapeutic agent delivery.

43. (original) The method of claim 32, further comprising:
titrating a tissue treatment based on information derived from a tissue identification or a tissue property.

44. (original) The method of claim 39, wherein the treatment is at least one of a resection, an ablation, an energy delivery, a drug delivery or a chemotherapeutic agent delivery.

45-46. (canceled)

47. (previously amended) The method of claim 1, further comprising:
obtaining a baseline tissue property measurement of the target tissue site utilizing the sensor array.

48. (previously amended) The method of claim 47, further comprising:
comparing the baseline property measurement to a second tissue property measurement made during or after the delivery of energy to the target tissue site.

49-52. (canceled)

53. (original) The method of claim 48, further comprising:

making an treatment endpoint decision responsive to the comparison of the baseline measurement to the second measurement.

54-56. (canceled)

57. (currently amended) ~~The method of claim 1, further comprising:~~ A method of treating a tumor comprising:

providing a tissue biopsy and treatment apparatus for detecting and treating a tumor, comprising an elongated delivery device including a lumen, a sensor array deployable from the elongated delivery device, the sensor array including a plurality of resilient members each having a tissue piercing distal portion, at least one of the plurality of resilient members being positionable in the elongated delivery device in a compacted state and deployable with curvature into tissue from the elongated delivery device in a deployed state, at least one of the plurality of resilient members including a sensor, the sensor array having a geometric configuration adapted to volumetrically sample tissue at a tissue site to differentiate or identify tissue at the tissue site; and at least some of the plurality of resilient members being electrodes which can be coupled to an RF energy source for ablating tissue when electrical energy is supplied to the electrodes from the source;

positioning said apparatus at a target tissue site;
delivering a marking agent to the target tissue site; and marking at least one of a tumor volume, a tumor surface, an ablated tissue volume, a hyperthermic tissue volume, or an injured tissue volume;

delivering energy to said electrodes to ablate or necrose at least a portion of the tumor volume; and

determining an amount of tumor volume ablation utilizing the sensor array.

58. (currently amended) The method of claim 57, wherein said tissue marking agent is ~~one~~ selected from the group consisting of a tumor marker, a temperature sensitive marker, a fluorescent marker, a radioactive marker, an antibody, an antibody-coupled marker, a liposome, a liposome-coupled marker, an antibody-coated liposome, a microsphere, ~~or~~ and a chemotherapeutic agent.

59. (currently amended) The method of claim 57, wherein said tissue marking agent includes a first marking agent and a second marking agent.

60. (original) The method of claim 59, wherein the first marking agent is configured to mark a first tissue condition and the second marking agent is configured to mark a second tissue condition.

61. (original) The method of claim 59, wherein the first marking agent is configured to mark a tumor condition and the second marking agent is configured to mark a thermal condition.

B6
cont-
62. (original) The method of claim 59, wherein the first marking agent is configured to mark a first tissue temperature and the second marking agent is configured to mark a second tissue a temperature.

63-66. (canceled)

67. (previously amended) The method of claim 57, wherein the sensor array is configured to detect the marking agent.

68. (original) The method of claim 67, wherein the sensor array is configured to obtain one of an improved resolution or a sensitivity.

69. (currently amended) The method of claim 57, further comprising a source of marking agent fluidically coupled to the elongated delivery device, the method ~~further comprising~~, wherein said delivering a marking agent comprises infusing the marking agent into the target tissue site.

70. (previously amended) The method of claim 57, wherein the marking agent includes a first marking agent coupled to a marking agent carrier, wherein the marking

agent carrier is configured to release the first agent marking at a selectable temperature, the method further comprising:

releasing the first marking agent in the target tissue site at a selectable temperature.

71. (original) The method of claim 70, further comprising:
delivering energy from the energy delivery device to release the marking agent.

72. (original) The method of claim 70, wherein the selectable temperature is in the range of about 40° C to about 60° C.

B6
cont -
73. (original) The method of claim 70, wherein the selectable temperature is in the range of about 45° C to about 55° C.

74. (currently amended) The method of claim 1, wherein the ~~geometric configuration~~ marking agent is configured used to detect one of a boundary or a volume of a tumor as at least a portion of the sensor array is advanced into a target tissue site.

75. (currently amended) The method of claim 1, wherein the ~~energy delivery device~~ electrode is one selected from the group consisting of an RF electrode, a monopolar electrode, or and a bipolar electrode.

76. (canceled)

77. (currently amended) The method of claim 452, wherein the sensor is ~~one~~ selected from the group consisting of an optical sensor, a photomultiplier, an optical fiber, a ccd, a temperature sensor, or and a chemical sensor.

cancel

78-81. (canceled)

82. (original) The method of claim 1, wherein the sensor array is configured to differentiate tissue during an energy delivery interval, a tissue desiccation condition, a tissue chaffing condition or a tissue vaporization condition.

83. (currently amended) The method of claim 1, wherein at least one of the resilient members ~~includes an infusion lumen and at least of the resilient members or the energy delivery device includes an~~ being adapted for fluid delivery therethrough to an infusion port, the method further comprising:

infusing a fluid into the target tissue.

84. (currently amended) The method of claim 83, wherein the fluid is ~~one~~ selected from the group consisting of an electrolytic solution, an electrical conductivity enhancing solution, a thermally conductivity enhancing solution, an image contrast agent, an RF energy absorption agent, ~~or~~ and an echogenic solution.

85-88. (canceled)

89. (currently amended) The method of claim 1, wherein the ~~at least one~~ sensor includes at least a first sensor and a second sensor.

90-91. (canceled)

92. (currently amended) The method of claim 89, wherein at least one of the first or second sensors is selected from the group consisting of an emitter, an electromagnetic emitter, an acoustical emitter, an optical emitter, a laser, and ~~or~~ an LED.

93. (original) The method of claim 92, wherein the emitter is substantially positioned within a volume defined by the sensor array.

94. (canceled)

95. (original) The method of claim 92, wherein the emitter emits a reference signal and a probe signal.

96. (original) The method of claim 95, wherein the at least one sensor includes a third sensor adapted to detect the reference signal.

Bb
cont.
97. (currently amended) The method of claim 95, further comprising:
employing the reference signal to compensate for a change in a tissue condition at the tissue site, hysteresis, thermal ~~hysteresis~~ hysteresis, or optical hysteresis.

98. (original) The method of claim 96, wherein the third sensor is positioned substantially adjacent or in proximity to the emitter.

99. (previously amended) The method of claim 92, wherein the emitter is configured to emit electromagnetic energy over a selectable frequency range.

100-104. (canceled)
